CHIEF INFORMATION OFFICER

DEPARTMENT OF THE TREASURY
INTERNAL REVENUE SERVICE
WASHINGTON, D.C. 20224

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MEMORANDUM FOR TREASURY INSPECTOR GENERAL FOR TAX ADMINISTRATION

FROM: W. Todd Grams
Chief Information Officer

SUBJECT: Audit Report - Improvements to the Modernized Infrastructure Are Needed to Support the Deployment of Business Systems Modernization Projects (Report # 2003-20-161)

We reviewed your audit report that confirms progress we made in developing and implementing management processes to modernize our systems infrastructure. We appreciate the opportunity to review and discuss various drafts of this report with your audit team and the adjustments that TIGTA made to earlier drafts.

As you noted in this report, developing a secure infrastructure to support the modernization program is extremely complex and difficult. Therefore, the first release of a secure on-line infrastructure for all modernization projects in May 2002, was a major accomplishment in IRS's Business Systems Modernization (BSM) program.

The Security & Technology Infrastructure Release (STIR) Release 1.0 was a monumental step in providing opportunities for the development and deployment of other modernized projects. The STIR provides a fully secure computing environment based upon Internet technology as a primary means for communicating and delivering taxpayer information, as well as providing a single secure gateway for IRS. Specifically, this project has:

- Delivered a fully integrated, shared information technology infrastructure, which includes hardware, software, shared applications and data, telecommunications, and security.

- Provided an enterprise-wide approach to systems and operations management that will yield future cost savings in developing, deploying and maintaining the infrastructure of the modernized environment.

It is critical to understand that without applications running on the infrastructure there is no value delivered, and it is not really possible to fully test or validate the proper

functioning and performance of the infrastructure in isolation. That was one of the primary reasons that the Internet Refund/Fact of Filing (IRFoF) application took on a critical role in addition to the taxpayer benefits it has delivered. Nevertheless, we believe that our testing and pilot production deployment of IRFoF in May 2002, was done with care and proper attention to business value, performance, and security issues.

We agree with most of your findings in this audit and in many cases have already taken specific actions to correct areas of weakness identified. However, we do not agree with your comments regarding compliance with our governance process, apprising executive decision makers of cost and schedule changes, and achieving appropriate project performance testing and approval before implementation.

Specifically, we believe that we fully complied with our governance process, keeping IRS executives fully apprised of progress, cost changes, and any risks prior to deployment. The IRFoF was deployed on STIR as a production pilot late in the filing season. Therefore, we believed that not being able to demonstrate its full performance requirements was not a serious risk and we wanted to get the operational experience with both the application and the STIR infrastructure before the full filing season. While completion of the documentation from the security certification may have lagged by a few weeks, a full security certification test was performed and all critical risks were fixed prior to deploying the production pilot.

Finally, we did not reduce our attention to reaching the full performance requirement before exiting Milestone 4, and contractor payments were withheld pending proof of reaching that level of performance. The 2003 IRFoF implementation was extremely successful, responding to over 17 million hits and receiving a very high customer satisfaction percentage.

We responded to the individual recommendations in the attachment. If you have any questions, please contact me at (202) 622-6800, or Fred Forman, Associate Commissioner for Business Systems Modernization at (202) 622-3378.

Attachment

Audit Report - Improvements to the Modernized Infrastructure Are Needed to Support the Deployment of Business Systems Modernization Projects (Report # 2003-20-161)

I. CRITICAL COORDINATION BETWEEN THE INFRASTRUCTURE AND OTHER PROJECTS IS OCCURRING TOO LATE

IDENTITY OF RECOMMENDATION 1: The BSMO to update the ELC with the details included in the guidance documents developed by the ISS program, and the new processes related to cross project dependencies and third-party software and hardware products.

CORRECTIVE ACTION No. 1: Disagree with this recommendation. We believe the Enterprise Life Cycle (ELC) already provides sufficient guidance on activities to be completed prior to MS 4 that requires adherence to a common infrastructure and the enterprise architecture. Expanding the ELC methodology will not improve coordination between projects or the capture of cross project dependencies. However, we are strengthening our ELC engineering reviews between Milestones 1 and 3 to incrementally capture technical and programmatic requirements upfront across the enterprise, including validation of infrastructure implications. These dependencies are captured in the Integrated Master Schedule (IMS). In addition, the Infrastructure Management Office provides training and technical guidance to support the modernization projects in designing to a common infrastructure.

IMPLEMENTATION DATE:

COMPLETED: N/A **PROPOSED: N/A**

RESPONSIBLE OFFICIAL: N/A

CORRECTIVE ACTION MONITORING PLAN: N/A

IDENTITY OF RECOMMENDATION 2: The BSMO to ensure BSM project teams follow and adhere to ELC processes and supplemental guidance provided by the ISS program. Special emphasis should be placed on infrastructure performance and capacity engineering processes.

CORRECTIVE ACTION No. 2: Agree with this recommendation. We have already taken actions to address this condition. We have issued the Customer's Guide to Infrastructure Shared Services and the Customer Guide to Development, Integration, and Test Environment. These guides provide critical infrastructure guidance to TIER B and C projects to better understand the services the Infrastructure Shared Services (ISS) provides and the activities to be performed in acquiring ISS assistance in developing, testing, integrating, and deploying their applications/systems into the modernized infrastructure. In addition, we have held several Knowledge Enhancement Seminars (KES) to describe the infrastructure and the benefits derived from the STIR and the Enterprise Systems Management (ESM) implementation, and to explain how users will interact with the systems. In addition, we developed ***The Capacity***

Planning/Performance Engineering Process Description that identifies performance testing activities and responsibilities throughout the life cycle. This document is currently under review.

IMPLEMENTATION DATE:

COMPLETED: **PROPOSED: March 30, 2004**

RESPONSIBLE OFFICIAL: Director, Infrastructure Modernization

CORRECTIVE ACTION MONITORING PLAN: N/A

IDENTITY OF RECOMMENDATION 3: The ISS program to verify that key infrastructure dependencies have been identified and documented before giving approval to exit the design phase and begin development.

CORRECTIVE ACTION No. 3: **Agree with this recommendation**. We have taken actions to address this condition during your audit review. The Milestone Exit Review Procedure dated September 26, 2002, specifically calls for criteria to align the project's efforts and plans with other IRS projects/initiatives. In addition, the improvements to the ELC engineering reviews described under corrective action number 1 will verify that key infrastructure dependencies have been identified and documented.

IMPLEMENTATION DATE:

COMPLETED: September 26, 2002 **PROPOSED: N/A**

RESPONSIBLE OFFICIAL: N/A

CORRECTIVE ACTION MONITORING PLAN: N/A

II. A DECISION TO DEPLOY WAS MADE EVEN WITH SIGNIFICANT COST INCREASES, AND LIMITATIONS ON SYSTEM PERFORMANCE

IDENTITY OF RECOMMENDATION 4: Hold the PRIME contractor accountable, within a reasonable percentage, to cost and schedule estimates developed at the end of the design phase (BBC). This would help force the PRIME contractor to improve the estimates provided to the IRS.

CORRECTIVE ACTION No. 4: **Agree with this recommendation.** However, we have already closed prior corrective actions to deal with contractor accountability via performance based contracting, and improved cost and schedule estimating techniques. New performance based contracting guidelines and templates for Milestone 1/2/3, 4/5, and support activities (program management, systems integration) have been developed and are

being implemented. We are in the process of developing a management directive for the use of firm-fixed price contracts on the BSM program, with an initial emphasis on firm-fixed price contracts for Milestone 4 and 5 activities, where we have experienced the greatest variance against cost and schedule baselines. This directive will be in place by October 30, 2003.

At the present time, we are also entering on our tracking system a recommendation stemming from the June 2003 GAO Report 03-768 to implement effective procedures for validating contactor developed cost and schedule estimates. We are working with the contractor to develop methods for risk-adjusting baseline estimates in the baseline business case, which is a prerequisite for entering into more aggressive contract types. All OMB Exhibit 300s for FY 2005 include these risk adjusted cost estimates. We believe that selecting contract types that transfer consequences of inadequate estimates to contractors is the best motivation for improving estimation reliability, and hold them accountable.

We have established the Contracts Executive Council, which is pursuing improvements across the spectrum of contract management for the modernization program. We believe that the results of these activities and the monitoring of the GAO recommendation will increase fidelity of actual results and estimates consistent with the intent of your recommendation and improve contracting effectiveness. In addition, contract management and cost schedule estimation processes are monitored monthly as part of our management process improvement.

IMPLEMENTATION DATE: October 30, 2003

COMPLETED: N/A **PROPOSED: N/A**

RESPONSIBLE OFFICIAL: Associate Commissioner for Business Systems Modernization

CORRECTIVE ACTION MONITORING PLAN: All accepted corrective actions are entered into the Item Tracking, Reporting and Control System (ITRAC). Status Update Reports for each corrective action are created and sent to the MITS Program Director's Office (PDO). This information is used to update the ITRAC system and is also sent to Office of Management Controls (OMC) as formal acknowledgment of the due dates and action plan. An EXCEL spreadsheet is used for monthly monitoring of pending corrective actions.

The OMC maintains an inventory of all corrective actions sent to Program Oversight in MITS for review and validation. When a corrective action is completed, completion dates are added to the Status Update Report and sent to OMC; corrective action is closed in the ITRAC database.

IDENTITY OF RECOMMENDATION 5: Require that additional efforts be undertaken to ensure that performance and capacity planning are adequately addressed at an enterprise level, and not allow deployment of any BSM project without demonstration of the capability to meet performance requirements.

CORRECTIVE ACTION No. 5: **Agree with this recommendation.** The Infrastructure Modernization Office is developing an End-to-End Capacity and Performance process for infrastructure projects to follow in support of application projects capacity and performance requirements. This process includes application projects that may have completed some development prior to their implementation on the modernized infrastructure environment.

IMPLEMENTATION DATE:

COMPLETED: **PROPOSED: September 30, 2003**

RESPONSIBLE OFFICIAL: Director, Infrastructure Modernization

CORRECTIVE ACTION MONITORING PLAN: All accepted corrective actions are entered into the Item Tracking, Reporting and Control System (ITRAC). Status Update Reports for each corrective action are created and sent to the MITS Program Director's Office (PDO). This information is used to update the ITRAC system and is also sent to Office of Management Controls (OMC) as formal acknowledgment of the due dates and action plan. An EXCEL spreadsheet is used for monthly monitoring of pending corrective actions.

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III. THE CAPACITY OF THE TEST LAB IS NOT ADEQUATE TO SUPPORT THE MODERNIZATION PROGRAM

IDENTITY OF RECOMMENDATION 6: Improvements to the test lab are made a key priority for funding.

CORRECTIVE ACTION No. 6: **Agree with this recommendation.** Infrastructure Modernization is expanding the Development Integration Test Environment (DITE). The Infrastructure Shared Services project purchased and the PRIME is installing equipment needed to improve the environment so that test activities may be conducted in parallel.

IMPLEMENTATION DATE:

COMPLETED: **PROPOSED: October 01, 2003**

RESPONSIBLE OFFICIAL: Director, Infrastructure Modernization

CORRECTIVE ACTION MONITORING PLAN: All accepted corrective actions are entered into the Item Tracking, Reporting and Control System (ITRAC). Status Update Reports for each corrective action are created and sent to the MITS Program Director's Office (PDO). This information is used to update the ITRAC system and is also sent to Office of Management Controls (OMC) as formal acknowledgment of the due dates and action plan. An EXCEL spreadsheet is used for monthly monitoring of pending corrective actions.

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IDENTITY OF RECOMMENDATION 7: The DITE project team to follow processes consistently and gather test lab requirements from projects earlier.

CORRECTIVE ACTION No. 7: **Agree with this recommendation.** We have already taken actions to address this condition. The DITE Customer Guide to DITE (CGTD) was officially identified for use as an ELC standard in February 2002. Since then, DITE has actively engaged the projects through the CGTD process and receives the test lab requirements as soon as the projects can provide them. Quarterly updates are performed of the CGTD and compliance to the process is documented. We are confident that since the issuance of this document, early project coordination between the projects and the infrastructure has improved, especially in the earlier gathering of test lab requirements. For example, the infrastructure teams worked closely with the Modernized E-file and IFS teams to design and develop infrastructure requirements for these projects and to plan their development, test and production equipment support. Acquisition and installation plans were coordinated with the projects as part of their plans/work breakdown structures, and ongoing performance against these plans is monitored at Executive Advisory Council and Sub-ESC meetings.

IMPLEMENTATION DATE:

COMPLETED: February 01, 2002 **PROPOSED: N/A**

RESPONSIBLE OFFICIAL: N/A

CORRECTIVE ACTION MONITORING PLAN: N/A

IV. STRONGER DISCIPLINES ARE NEEDED TO ENSURE CONFIGURATIONS OF INFRASTRUCTURE COMPONENTS ARE CLEARLY DOCUMENTED

IDENTITY OF RECOMMENDATION 8: The PRIME contractor to focus on documenting the infrastructure configurations in the various environments and begin managing those configurations. This should be done immediately to avoid future problems and delays in the testing and deployment of modernized systems. Additionally, appropriate views of the production environment should be provided to contractor personnel so that configurations can be documented.

CORRECTIVE ACTION No. 8: Agree with this recommendation. The ISS and DITE are refining the configuration management of the various environments by developing change processes among the production, test, and development environments and incorporating them into the Current Production Environment change processes.

IMPLEMENTATION DATE:

COMPLETED: **PROPOSED: December 1, 2003**

RESPONSIBLE OFFICIAL: Director, Infrastructure Modernization

CORRECTIVE ACTION MONITORING PLAN: All accepted corrective actions are entered into the Item Tracking, Reporting and Control System (ITRAC). Status Update Reports for each corrective action are created and sent to the MITS Program Director's Office (PDO). This information is used to update the ITRAC system and is also sent to Office of Management Controls (OMC) as formal acknowledgment of the due dates and action plan. An EXCEL spreadsheet is used for monthly monitoring of pending corrective actions.

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V. CHANGE REQUESTS WERE NOT PROCESSED EFFECTIVELY

IDENTITY OF RECOMMENDATION 9: The BSMO and PRIME contractor to focus on critical and high-priority change requests (CR) that are approaching or are delayed beyond the dates by which the changes are needed. Additionally, organizations or individuals requesting changes should be required to develop reasonable dates by which changes are needed.

CORRECTIVE ACTION No. 9: Agree with this recommendation. We are working closely with PRIME Configuration Management Office (CMO) to improve the overall change request process to include prioritization and reasonable due dates. In addition, we are closely tracking and reporting open

CR's that are overdue (based on due date), critical or high priority, or open for more than 60 days.

IMPLEMENTATION DATE:

COMPLETED: **PROPOSED: September 30, 2003**

RESPONSIBLE OFFICIAL: Associate Commissioner for Business Systems Modernization

CORRECTIVE ACTION MONITORING PLAN: All accepted corrective actions are entered into the Item Tracking, Reporting and Control System (ITRAC). Status Update Reports for each corrective action are created and sent to the MITS Program Director's Office (PDO). This information is used to update the ITRAC system and is also sent to Office of Management Controls (OMC) as formal acknowledgment of the due dates and action plan. An EXCEL spreadsheet is used for monthly monitoring of pending corrective actions.

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IDENTITY OF RECOMMENDATION 10: The need-by date field to be completed on all change request forms.

CORRECTIVE ACTION No. 10: Agree with this recommendation. We have developed a Change Request (CR) that upgrades fields in the Change Request Tracking System (CRTS) tool to clarify definition of date field and assist CRTS users in completing these forms. These process improvements and the ones outlined in Recommendation 9 will ensure this date is filled in at least prior to the Review State (PRIME Impact Assessment).

IMPLEMENTATION DATE:

COMPLETED: N/A **PROPOSED: September 30, 2003**

RESPONSIBLE OFFICIAL: N/A

CORRECTIVE ACTION MONITORING PLAN: All accepted corrective actions are entered into the Item Tracking, Reporting and Control System (ITRAC). Status Update Reports for each corrective action are created and sent to the MITS Program Director's Office (PDO). This information is used to update the ITRAC system and is also sent to Office of Management Controls (OMC) as formal acknowledgment of the due dates and action plan. An EXCEL spreadsheet is used for monthly monitoring of pending corrective actions.

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VI. PROJECT RISKS WERE NOT TIMELY IDENTIFIED AND ADDRESSED

IDENTITY OF RECOMMENDATION 11: The BSMO to ensure that risk management processes are being followed and that risks and issues are timely and effectively identified, tracked, and mitigated.

CORRECTIVE ACTION No. 11: Agree with this recommendation. However, we are taking corrective actions on this condition. The implementation of the risk management process has been identified as one of our top ten risks; and is being tracked on ITRAC. A mitigation plan has been developed and is monitored monthly as part of our management process improvement. The BSMO Risk Management Staff has already established a comprehensive life cycle approach to risk and issue management. The publication and implementation of an organizational risk, issue and action item process, and the associated directives, processes and procedures are in place. Improved ITRAC reports have been developed to track overage risks and issues, a risk/issue status indicator has been added to the BSM dashboard, and the status of risks and issues are now covered in all Program Integration Review and Project Status Review meetings.

IMPLEMENTATION DATE:

COMPLETED: N/A **PROPOSED: N/A**

RESPONSIBLE OFFICIAL: Associate Commissioner for Business Systems Modernization

CORRECTIVE ACTION MONITORING PLAN: All accepted corrective actions are entered into the Item Tracking, Reporting and Control System (ITRAC). Status Update Reports for each corrective action are created and sent to the MITS Program Director's Office (PDO). This information is used to update the ITRAC system and is also sent to Office of Management Controls (OMC) as formal acknowledgment of the due dates and action plan. An EXCEL spreadsheet is used for monthly monitoring of pending corrective actions.

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